REMARKS/ARGUMENTS

Claims 1, 3-18 and 26-36 are pending in this application. By this Amendment, claims10, 13-16, 18 and 32 are amended. Support for the claims can be found throughout the specification, including the original claims and the drawings. Withdrawal of the rejections in view of the above amendments and the following remarks is respectfully requested.

I. Rejection Under 35 U.S.C. §101

The Office Action rejects claims 10-18, 32, 34 and 36, asserting that these claims do not fall within one of the four statutory categories of invention. It is respectfully submitted that the amendments to independent claims 10 and 32 are responsive to the Examiner's comments, and that claims 10-18, 32, 34 and 36 meet the requirements of 35 U.S.C. §101. Accordingly, the rejection should be withdrawn.

II. Rejections Under 35 U.S.C. §103(a)

A. Irube, Murphy and Berstis

The Office Action rejects claims 1, 3, 4, 6-8, 26-28 and 33 under 35 U.S.C. §103(a) over Irube in view of Murphy, and further in view of Berstis. The rejection is respectfully traversed.

Independent claim 1 is directed to a mobile terminal. The mobile terminal includes a codec configured to perform a converting operation between analog voice data and digital voice data, a camera module connected to a camera installed within the mobile terminal, the camera module configured to perform a converting operation between analog image data and digital image data, and a direction sensor configured to detect compass orientation direction data

associated with an image located in a photographing direction of the camera, wherein the direction data is formatted in two bytes, wherein the first byte provides compass heading information and the second byte provides compass bearing information. The mobile terminal also includes a voice/image communication apparatus configured to multiplex or demultiplex the direction data and at least one of converted voice or image data, a display module configured to display the image from demultiplexed image data and the direction data from the voice/image communication apparatus, wherein the direction data is displayed in the image by the display module, a speaker configured to output voice data demultiplexed by the voice/image communication apparatus, and a control unit configured to control the codec, camera module, voice/image communication apparatus, and display module, wherein the control unit checks whether a direction displaying mode has been selected and controls the display module to display the demultiplexed image data and the direction data simultaneously when the direction display mode is selected.

As acknowledged in the Office Action, Irube alone neither discloses nor suggests all of the features of independent claim 1, or the claimed combination of features. In particular, the Office Action acknowledges that Irube's camera direction sensor unit 28 senses merely whether or not a camera unit 4 is actually attached to a terminal 1, but does not collect any type of direction data. Thus, Irube neither discloses nor suggests that the direction sensor unit 28 is configured to detect compass orientation direction data associated with an image located in a photographing direction of the camera, wherein the direction data is formatted in two bytes,

wherein the first byte provides compass heading information and the second byte provides compass bearing information, as recited in independent claim 1.

The Office Action combines Irube with Murphy, asserting that Murphy teaches such features, and that, based on Murphy's teachings, it would have been obvious to modify Irube's communication terminal, an in particular Irube's direction sensor unit 28, to include features of the geographical position/image digital recording and display system disclosed by Murphy. Applicant respectfully disagrees.

Murphy discloses a system 100 that stores object images and position coordinates as digital data. The system includes a data recording unit 102 having a geographical position detector (GPD) 110 that outputs digital position data 120, a digital position data recorder (GPDR) 130, an indexing unit 140, and an optical path system (OPS) 160 that outputs digital image data 170 to an image recording device (IRD) 180. In operation, an image 150 is captured by the OPS 160, which generates digital image data 170 that is processed and stored in the IRD 180. If the image data 150 includes a digital location L_i, the processing unit 140 provides an index number N_i that is recorded along with the digital location data L_i as the image data is captured.

Independent claim 1 recites a direction sensor configured to detect compass orientation direction data associated with an image located in a photographing direction of the camera, wherein the direction data is formatted in two bytes, wherein the first byte provides compass heading information and the second byte provides compass bearing information. In contrast,

Murphy teaches only that digital location L_i is collected and then stored and indexed with a particular digital image. However, Murphy is silent as to the specific format of the digital location data L_i. Murphy neither discloses nor suggests that direction data that is formatted in two bytes, wherein the first byte provides compass heading information and the second byte provides compass bearing information, as recited in independent claim 1.

The Office Action asserts that Murphy teaches such a formatting of direction data at column 13/lines 60-67. This section of Murphy's disclosure is directed to a second embodiment of the system 300, including a camera body 310 having an optical lens system 330 that is focused on a reference object 320 to be photographed. Murphy discloses that Cartesian coordinates (x, y, z) are used to establish a reference point of the system 300, and attitude coordinates (such as azimuth or heading) of reference axes of the system 300, and in particular, of a focus line of the lens system 330 pointed at the reference object 320. Both the Cartesian coordinates and the attitude coordinates are related specifically to the system 300 and its components, and not the object to be photographed. Thus, Murphy neither discloses nor suggests a direction sensor configured to detect compass orientation direction data associated with an image, as recited in independent claim 1. Further, even in this section of Murphy's disclosure (specifically referred to in the Office Action), Murphy neither discloses a specific manner in which the Cartesian coordinates/attitude coordinates are formatted. Murphy neither discloses nor suggests that direction data that is formatted in two bytes, wherein the first byte provides compass heading

information and the second byte provides compass bearing information, as recited in independent claim 1.

Further, as acknowledged in the Office Action and as set forth in previous replies, Berstis fails to overcome the deficiencies of Irube and Murphy. That is, Berstis' inertial sensors 16 only collect position information of an object relative to a previously stored reference position of the photographing device 10, which is not necessarily representative of an actual position of a photographed object itself, as the data collected by the inertial sensors 16 only reflects a position of the object relative to a current position of the device 10. Even if this data were to be compass orientation direction data, which it is not, Berstis is silent as to how, and in what format, the information is collected and transmitted. Like Irube and Murphy, Berstis neither discloses nor suggests a direction sensor configured to detect compass orientation direction data associated with an image located in a photographing direction of the camera, wherein the direction data is formatted in two bytes, wherein the first byte provides compass heading information and the second byte provides compass bearing information, as recited in independent claim 1.

It is noted that the Office Action refers to Rossi in the discussion that follows the statement of rejection, although Rossi is not included in this statement of rejection. However, as set forth in previous replies, Rossi fails to overcome the deficiencies of Irube, Murphy and Berstis. That is, Rossi's object location identification system 10 measures and outputs heading and depression angle data associated with a pointing device 16 to ultimately generate latitude, longitude and altitude data corresponding to the pointing device user's location. As with Irube,

Murphy and Berstis, Rossi is silent as to how, and in what format, the disclosed location identification system 10 collects and transmits any type of information at all, let alone the claimed direction data.

Accordingly, it is respectfully submitted that independent claim 1 is allowable over the applied combination, and thus the rejection of independent claim 1 under 35 U.S.C. §103(a) over Irube, Murphy and Berstis (and Rossi) should be withdrawn. Dependent claims 3, 4, 6-8, 26-28 and 33 are allowable over Irube, Murphy and Berstis at least for the reasons set forth above with respect to independent claim 1, from which they depend, as well as for their added features.

B. Irube, Murphy, Berstis and Rudow

The Office Action rejects claims 5, 10 and 12-18 under 35 U.S.C. §103(a) over Irube, Murphy and Berstis in view of Rudow. The rejection is respectfully traversed.

Independent claim 10 is directed to a method for displaying image data direction of a photographing object on a screen of a mobile terminal. The method includes receiving image data at the mobile terminal associated with the photographing object, and demultiplexing the image data and separating the image data into at least one of image or voice data and compass orientation direction data, comprising receiving a first byte of compass orientation direction data that provides a compass heading and receiving a second byte of compass orientation direction data that provides a compass bearing. The method also includes checking the demultiplexed data for a setting of a direction displaying mode from the direction displaying processing unit, determining a position of the photographing object and a method for displaying corresponding

image and compass orientation direction data on the screen of the mobile terminal from the direction displaying processing unit if the direction displaying mode is set, and displaying the separated image and compass orientation direction data simultaneously on the screen of the mobile terminal in the determined position and determined method, wherein the compass orientation data is displayed within the image on the screen of the mobile terminal, the compass orientation direction data being associated with a direction of the image, the image being located in a photographing direction of a camera of the mobile terminal.

As set forth above, Irube, Murphy and Berstis, either alone or in combination, neither disclose nor suggest such features. More specifically, Irube, Murphy and Berstis, either alone or in combination, neither disclose nor suggest receiving a first byte of compass orientation direction data that provides a compass heading and receiving a second byte of compass orientation direction data that provides a compass bearing, as recited in independent claim 10. Further, as set forth in previous replies, Rudow fails to overcome the deficiencies of Irube, Murphy and Berstis. That is, Rudow 's display for a golf cart always displays a map, golf cart position and orientation symbol, and yardage to the hole, based on Rossi is completely silent as to how and in what format the golf cart and hole position is collected and transmitted to the cart. Like Irube, Murphy and Berstis, Rudow neither discloses nor suggests receiving a first byte of compass orientation direction data that provides a compass heading and receiving a second byte of compass orientation direction data that provides a compass bearing, as recited in independent claim 10.

Accordingly, it is respectfully submitted that independent claim 10 is allowable over the applied combination, and thus the rejection of independent claim 10 under 35 U.S.C. §103(a) over Irube, Murphy, Berstis and Rudow should be withdrawn. Dependent claims 12-18 are allowable over Irube, Murphy, Berstis and Rudow at least for the reasons set forth above with respect to independent claim 10, from which they depend, as well as for their added features.

Likewise, dependent claim 5 is allowable over Irube, Murphy and Berstis at least for the reasons set forth above with respect to independent claim 1, from which it depends, as well as for its added features. Further, as set forth above, Rudow fails to overcome the deficiencies of Irube, Murphy and Berstis. Accordingly, it is respectfully submitted that claim 5 is allowable over the applied combination, and thus the rejection of claim 5 under 35 U.S.C. §103(a) over Irube, Murphy, Berstis and Rudow should be withdrawn.

C. Irube, Murphy, Berstis and Takahashi

The Office Action rejects claims 9 and 11 under 35 U.S.C. §103(a) over Irube, Murphy and Berstis in view of Takahashi. The rejection is respectfully traversed.

Dependent claims 9 and 11 are allowable over Irube, Murply and Berstis at least for the reasons set forth above with respect to independent claims 1 and 10, from which they respectively depend, as well as for their added features. Further, Takahashi is merely cited as allegedly teaching the formation of null data sets, and thus fails to overcome the deficiencies of Irube, Murphy and Berstis. Accordingly, it is respectfully submitted that claims 9 and 11 are

allowable over the applied combination, and thus the rejection of claims 9 and 11 under 35 U.S.C. §103(a) over Irube, Murphy, Berstis and Takahashi should be withdrawn.

D. Irube, Murphy, Berstis and Vance

The Office Action rejects claim 32 under 35 U.S.C. §103(a) over Irube, Murphy and Berstis in view of Vance. It appears, based on the comments in the Office Action, that it was the Examiner's intention to also reject claim 36 under 35 U.S.C. §103(a) over Irube, Murphy, Berstis and Vance The rejection is respectfully traversed.

Independent claim 32 is directed to a method of displaying direction information on a screen of a camera phone. Independent claim 32 recites that the method includes, *inter alia*, collecting data related to an object being photographed, comprising collecting direction data, voice data and image data in a packetized format, wherein a first portion of the packetized direction data is provided between the packetized voice data and the packetized image data, and a second portion of the packetized direction data is provided between first and second portions of the packetized image data.

As set forth above, Irube, Murphy and Berstis, either alone or in combination, neither disclose nor suggest the features of independent claim 32, or the claimed combination of features. Further, Vance is merely cited as allegedly teaching displaying an image on a screen of a camera phone, and thus fails to overcome the deficiencies of Irube, Murphy and Berstis. Accordingly, it is respectfully submitted that independent claim 32 is allowable over the applied combination, and thus the rejection of independent claim 32 under 35 U.S.C. §103(a) over Irube,

Murphy, Berstis and Vance should be withdrawn. Dependent claim 36 is allowable over Irube, Murphy, Berstis and Vance at least for the reasons set forth above with respect to independent claim 32, from which it depends, as well as for its added features.

E. Irube, Murphy, Berstis and Yamagashi

The Office Action rejects claims 29-31 and 35 under 35 U.S.C. §103(a) over Irube, Murphy and Berstis in view of Yamagashi. The rejection is respectfully traversed.

Independent claim 29 is directed to a mobile terminal. Independent claim 29 recites that the mobile terminal includes, *inter alia*, a receiving unit configured to receive multiplexed data including image data and compass orientation direction data associated with the image data, wherein the receiving unit receives direction data, voice data and image data in a packetized format, wherein a first portion of the packetized direction data is provided between the packetized voice data and the packetized image data, and a second portion of the packetized direction data is provided between first and second portions of the packetized image data.

As set forth above, Irube, Murphy and Berstis, either alone or in combination, neither disclose nor suggest the features of independent claim 29, or the claimed combination of features. Further, Yamagashi fails to overcome the deficiencies of Irube, Murphy and Berstis.

Yamagashi discloses an audio data compression system in which data is packetized and compressed so as to facilitate the transmission of the data. However, Yamagashi's disclosure is focused on the compression of audio data. Yamagashi neither discloses nor suggests a receiving unit that receives direction data, voice data and image data in a packetized format, as recited in

independent claim 29. Further, Yamagashi necessarily provides no specific disclosure whatsoever as to the relative positioning of such packets of direction data, voice data and image data. Thus, Yamagashi neither discloses nor suggests a first portion of the packetized direction data is provided between the packetized voice data and the packetized image data, and a second portion of the packetized direction data is provided between first and second portions of the packetized image data, as recited in independent claim 29.

Accordingly, it is respectfully submitted that independent claim 29 is allowable over the applied combination, and thus the rejection of independent claim 29 under 35 U.S.C. §103(a) over Irube, Murphy, Berstis and Yamagashi should be withdrawn. Dependent claims 30, 31 and 35 are allowable over Irube, Murphy, Berstis and Yamagashi at least for the reasons set forth above with respect to independent claim 29, from which they depend, as well as for their added features.

F. Irube, Murphy, Berstis, Rudow and Yamagashi

The Office Action rejects claim 34 under 35 U.S.C. §103(a) over Irube, Murphy and Berstis in view of Rudow, and further in view of Yamagashi. The rejection is respectfully traversed.

Dependent claim 34 is allowable over Irube, Murphy, Berstis and Rudow at least for the reasons set forth above with respect to independent claim 10, from which it depends, as well as for its added features. Further, as set forth above, Yamagashi fails to overcome the deficiencies of Irube, Murphy, Berstis and Rudow. Accordingly, it is respectfully submitted that claim 34 is

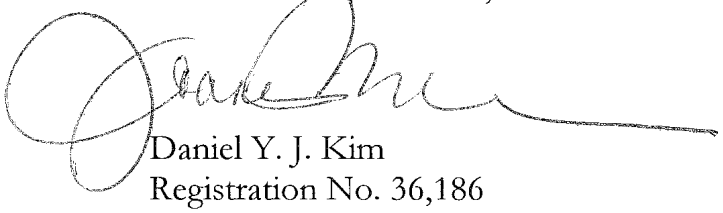
allowable over the applied combination, and thus the rejection of claim 34 under 35 U.S.C. §103(a) over Irube, Murphy, Berstis, Rudow and Yamagashi should be withdrawn.

III. Conclusion

In view of the foregoing amendments and remarks, it is respectfully submitted that the application is in condition for allowance. If the Examiner believes that any additional changes would place the application in better condition for allowance, the Examiner is invited to contact the undersigned, **Joanna K. Mason**, at the telephone number listed below.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this, concurrent and future replies, including extension of time fees, to Deposit Account 16-0607 and please credit any excess fees to such deposit account.

Respectfully submitted,
KED & ASSOCIATES, LLP



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